CLAIMS

What Is Claimed Is:

1. A coated substrate for ink-jet ink printing, said coated substrate having a printing surface and an opposing back surface, said printing surface comprising a coating formulated for accepting an ink-jet ink composition, and said back surface comprising a coating formulated for repelling said ink-jet ink composition.

2. A coated substrate as in claim 1 wherein the printing surface comprises a swellable or polymeric coating.

3. A coated substrate as in claim 1 wherein the back surface comprises a substantially hydrophobic coating.

4. A coated substrate as in claim 3 wherein the substantially hydrophobic coating comprises a polymeric blend of a hydrophilic polymeric binder and a hydrophobic polymeric binder, and further comprises hydrophobic beads dispersed within the polymeric blend.

5. A coated substrate as in claim 4 wherein the hydrophilic polymeric binder to hydrophobic polymeric binder ratio is from 1:5 to 1:1 by weight, and the polymeric blend to hydrophobic bead ratio is from 1:9 to 8:2 by weight.

6. A coated substrate as in claim 4 wherein the hydrophilic polymeric binder to hydrophobic polymeric binder ratio is from 1:4 to 2:3 by weight, and the polymeric blend to hydrophobic bead ratio is from 1:3 to 3:2 by weight.

7. A coated substrate as in claim 4 wherein the hydrophilic polymeric binder is selected from the group consisting of gelatin, modified gelatin, polyvinyl alcohol, modified polyvinyl alcohol, methyl cellulose, polyvinyl pyrolidone, polyethylene oxide, polyvinyl acetal, modified polyvinyl acetal and combinations thereof, and wherein the hydrophobic polymeric binder is selected from the group consisting of styrene/methacrylate copolymers, acrylates, methacrylates, and combinations thereof,

and wherein the hydrophobic beads are selected from the group consisting of polyethylene, polystyrene, polymethacrylate, polyacrylate, polypropylene, glass, silica, and combinations thereof.

8. A coated substrate as in claim 4 wherein the hydrophobic beads are from 0.01 μm to 100 μm in size, providing an average surface roughness greater than about 80 Sheffield units.

9. A coated substrate as in claim 3 wherein the substantially hydrophobic coating comprises a hydrophobic polymeric binder blended with a natural wax.

10. A coated substrate as in claim 9 wherein the hydrophobic polymeric binder is selected from the group consisting of styrene/methacrylate copolymers, styrene/acrylate copolymers, acrylates, methacrylates and combinations thereof; and wherein the natural wax is selected from the group consisting of carnauba wax, montan wax, paraffin, and combinations thereof.

11. A coated substrate as in claim 9 wherein the substantially hydrophobic coating has a hydrophobic binder to natural wax ratio from 1:9 to 9:1 by weight.

12. A coated substrate as in claim 9 wherein the substantially hydrophobic coating has an average surface roughness greater than about 80 Sheffield units.

13. Ink-jet ink printing media, comprising:

a) a substrate having a first side and an opposing second side;

b) a hydrophilic polymeric material coated on the first side and the second side of the substrate; and

c) a substantially hydrophobic polymeric composite material coated over the hydrophilic polymeric material on the second side of the substrate.

14. Ink-jet ink printing media as in claim 13 wherein the hydrophilic polymeric material is a member selected from the group consisting of gelatin, modified gelatin, polyvinyl alcohol, modified polyvinyl alcohol, methyl cellulose, polyvinyl pyrolidone, polyethylene oxide, polyvinyl acetal, modified polyvinyl acetal and combinations thereof.

15. Ink-jet ink printing media as in claim 13 wherein the substantially hydrophobic polymeric composite material is a polymeric blend of a hydrophilic polymeric binder and a hydrophobic polymeric binder having at least 50% by weight of the hydrophobic polymeric binder, and further comprising hydrophobic beads dispersed within the polymeric blend.

16. Ink-jet printing media as in claim 13 wherein the hydrophobic polymeric binder is selected from the group consisting of styrene/methacrylate copolymers, styrene/acrylate copolymers, acrylates, methacrylates, and combinations thereof; the hydrophilic polymeric binder is selected from the group consisting of gelatin, modified gelatin, polyvinyl alcohol, modified polyvinyl alcohol, methyl cellulose, polyvinyl pyrolidone, polyethylene oxide, polyvinyl acetal, modified polyvinyl acetal and combinations thereof; and wherein the hydrophobic beads are selected from the group consisting of polyethylene, polystyrene, polymethacrylate, polyacrylate, polypropylene , glass, silica, and combinations thereof.

17. Ink-jet printing media as in claim 15 wherein the hydrophilic polymeric binder to hydrophobic polymeric binder ratio is from 1:5 to 1:1 by weight, and the polymeric blend to hydrophobic bead ratio is from 1:9 to 8:2 by weight.

18. Ink-jet printing media as in claim 15 wherein the hydrophilic polymeric binder to hydrophobic polymeric binder ratio is from 1:4 to 2:3 by weight, and the polymeric blend to hydrophobic bead ratio is from 1:3 to 3:2 by weight.

19. Ink-jet printing media as in claim 13 wherein the hydrophobic beads are from 0.1 μm to 100 μm in size, providing an average surface roughness greater than about 80 Sheffield units.

20. Ink-jet printing media as in claim 13 wherein the substantially hydrophobic polymeric composite material comprises a hydrophobic polymeric binder blended with a natural wax.

21. Ink-jet printing media as in claim 20 wherein the hydrophobic polymeric binder is selected from the group consisting of styrene/methacrylate copolymers, styrene/acrylate copolymers, acrylates, methacrylates and combinations thereof; and wherein the natural wax is selected from the group consisting of carnauba wax, montan wax, paraffin, and combinations thereof.

22. Ink-jet printing media as in claim 20 wherein the substantially hydrophobic composite material coating has a hydrophobic binder to natural wax ratio from 1:9 to 9:1 by weight.

23. Ink-jet printing media as in claim 20 wherein the substantially hydrophobic composite material coating has an average surface roughness greater than about 80 Sheffield units.

24. A composite coating material for overcoating hydrophilic coated printing media, comprising:

a) a polymeric blend of a hydrophilic polymeric binder and a hydrophobic polymeric binder, said polymeric blend having a hydrophilic polymeric binder to hydrophobic polymeric binder ratio from 1:5 to 1:1 by weight; and

b) hydrophobic beads dispersed within the polymeric blend, wherein the polymeric blend to hydrophobic bead ratio is from 1:9 to 8:2 by weight.

25. A composite coating material as in claim 24 wherein the hydrophilic polymeric binder to hydrophobic polymeric binder ratio is from 1:4 to 2:3 by weight, and wherein the polymeric blend to hydrophobic bead ratio is from 1:3 to 3:2 by weight.

26. A composite coating material as in claim 24 wherein the hydrophobic beads are from 0.1 μm to 100 μm in size, providing an average surface roughness greater than about 80 Sheffield units.

27. A coated substrate for ink-jet ink printing, said coated substrate having a printing surface and an opposing back surface, said printing surface comprising a coating formulated for accepting an ink-jet ink composition, and said back surface comprising a backcoating formulated for repelling said ink-jet ink composition, said backcoating further comprising a hydrophobic polymeric binder blended with a natural wax.

28. A coated substrate as in claim 27 wherein the hydrophobic polymeric binder is selected from the group consisting of styrene/methacrylate copolymers, styrene/acrylate copolymers, acrylates, methacrylates and combinations thereof; and wherein the natural wax is selected from the group consisting of carnauba wax, montan wax, paraffin, and combinations thereof.

29. A coated substrate as in claim 27 wherein the substantially hydrophobic coating has a hydrophobic binder to natural wax ratio from 1:9 to 9:1 by weight.

30. A coated substrate as in claim 27 wherein the substantially hydrophobic coating has an average surface roughness greater than about 80 Sheffield units.